

## **CLAIM AMENDMENTS**

Claims 1-6 (Cancelled)

7. (Original) A power turbine speed control system for a helicopter comprising:
- a) means for generating a power turbine speed signal based upon a demanded speed;
  - b) means for filtering the power turbine speed signal by effectuating a rapid attenuation of main and tail rotor torsional frequencies in the power turbine speed signal without compromising phase at low frequencies;
  - c) a governor for providing isochronous power turbine speed and rotor speed control based upon the filtered power turbine speed signal; and
  - d) damping means for actively damping main and tail rotor torsional frequencies.

8. (Original) A power turbine speed control system as recited in Claim 7, wherein the damping means includes means for estimating a plurality of engine states based upon a single measured engine state.

9. (Original) A power turbine speed control system as recited in Claim 8, wherein the single measured engine state is power turbine shaft torque.

10. (Original) A power turbine speed control system as recited in Claim 7, wherein the damping means includes a linear quadratic regulator that provides combusive

damping.

11. (Original) A power turbine speed control system as recited in Claim 7, further comprising means for selectively activating the damping means.

12. (Original) A turbine speed control system as recited in Claim 7, wherein the damping means is tuned to provide attenuation of resonant frequencies so as not to influence low frequency response of the system.

13. (Original) A power turbine speed control system as recited in Claim 12, wherein the damping means includes a high pass filter.

Claims 14 through 19 (cancelled).